

REVISED

Libby Montana Time Critical Asbestos Removal Project Operable Unit 02

DRAFT Amendment No. 1 to Removal Action Work Plan
dated May 17, 2000

SDMS Document ID



2000524

2000 Construction Season

Activities described in the Removal Action Work Plan dated May 17, 2000 (RAWP) for the Operable Unit 02 were based primarily upon demolition debris and excavated asbestos containing soils being disposed at a location designated as Hole 23 on the abandoned vermiculite mine property off Highway 37 in Libby, Montana. As the building demolitions and soil removal actions began at the Operable Unit 02 site in May 2000, EPA and its subcontractor, the Volpe Center, were denied access to Hole 23 in the abandoned vermiculite mine property by the property owners. This denial of access for disposal of demolition debris and excavated asbestos containing soils from the Operable Unit 02 was the primary cause for the following modifications to the RAWP during the 2000 construction season:

1. Temporary Stockpiling of Asbestos Containing Soils

Section 2.1.2 of the RAWP dated May 17, 2000 described EPA's plan to dispose of demolition debris and asbestos containing soils from the Operable Unit 02 at Hole No. 23 at the abandoned mine site off Highway 37. When the owners of the mine site denied EPA access to Hole No. 23, EPA determined that building demolitions at Operable Unit 02 would continue as planned, but demolition debris would be temporarily stockpiled on the Operable Unit 02 site. In a similar determination, EPA decided to continue the excavation of asbestos containing soils at Operable Unit 02 and temporarily stockpile the excavated soils in and around the Long Shed. EPA then began legal proceedings against the mine owners in an effort to gain access to the abandoned mine site for disposal of demolition debris and asbestos containing soils from Operable Unit 02.

Section 2.2.4 of the RAWP dated May 17, 2000 described EPA's plan to demolish all structures on Operable Unit 02 and remove asbestos containing soils in 6-inch increments with confirmatory sampling to a maximum depth of 18 inches. Following excavation and disposal of the asbestos containing soils at Hole No. 23, Section 2.2.4 of the RAWP dated May 17, 2000 went on to describe the restoration of Operable Unit 02 by backfilling excavated areas with common fill, gravel, or topsoil meeting government requirements. Asbestos containing soils were not removed from the property during the 2000 construction season. In order to continue the time critical removal action, EPA decided to temporarily stockpile asbestos containing soils in and around the Long Shed.

The Long Shed is the largest structure on the Operable Unit 02 property presently owned by Mel and Lerah Parker. The Long Shed was scheduled for demolition along with other structures located on the Parkers' property as soon as contents of the buildings were inventoried, valued, and either disposed or relocated to storage of the prospective owners. However, with access to Hole 23 denied, EPA's on scene coordinator (OSC) elected to proceed with demolition of on-site structures, except for the Long Shed, and temporarily stockpile demolition debris on the Parkers' property. Rather than demolish the Long Shed immediately, it was used for temporary storage of excavated asbestos containing soils from the Operable Unit 02 property. Excavated asbestos containing soils from the portion of the Parkers' property north and south of Rainy Creek has been temporarily stored in and around the Long Shed. Once access to the abandoned vermiculite mine site is obtained by EPA, it is planned to remove the excavated asbestos containing soils from inside and around the Long Shed and haul it to the abandoned vermiculite mine property for disposal.

2. Temporary Stockpiling of Demolition Debris

Section 2.1.2 of the RAWP dated May 17, 2000 described the general disposal procedures EPA planned to follow while disposing of demolition debris from Operable Unit 02 at Hole No. 23 at the abandoned mine site. Section 2.2.3 of the RAWP dated May 17, 2000 described activities such as decontamination of trucks and dust suppression in relation to transporting demolition debris to the mine site. Since access to the mine site was denied, the debris generated by the demolition of buildings and structures, other than the Long Shed, on the Operable Unit 02 was also temporarily stockpiled on the site pending future disposal at the abandoned vermiculite mine property.

3. Schedule Implications

The planned schedule included in the RAWP dated May 17, 2000 was based upon removing demolition debris as structures were demolished and removing asbestos contaminated soils from Operable Unit 02 as excavation took place. Since access to the mine was denied, planned site operations had to be segmented and became two- and three-step operations instead of an efficient one-step operation. The removal schedule had to be scaled back significantly from the original goal of having all demolition debris and asbestos containing soils disposed of at Hole No. 23 by Fall 2000, the site backfilled, topsoiled and hydroseeded. Sections 3.1.6 of the RAWP dated May 17, 2000 provided requirements for dismantling structures, including the Long Shed. Since the Long Shed was used for temporary stockpiling of asbestos containing soils, its demolition was rescheduled to 2001.

The change in removal operations necessitated by denial of access to the abandoned vermiculite mine property severely impacted the 2000 construction schedule planned for the removal action at the Operable Unit 02. Soils originally planned to be disposed of at the abandoned vermiculite mine property were stockpiled on the site rather than removed and disposed of immediately in one operation. Asbestos containing soils below the stockpiles will need to be removed during the 2001 construction season. In addressing these schedule impacts, EPA and the Volpe Center recognized that it would not be possible to complete soil excavation, backfilling, regrading, topsoiling, and hydroseeding before winter 2000-2001. CDM Federal was requested to develop interim erosion control measures and methods of covering stockpiled soil over the winter shutdown period.

4. Interim Erosion Control Measures

The original RAWP indicated that erosion control requirements were to be described within anticipated specification Section 02270. During consideration of the excavation plan, interim erosion control measures were designed by CDM Federal in accordance with requests from the Volpe Center. Erosion control measures included installation of drainage swales in conjunction with terracing excavated areas on the Parker property north and south of Rainy Creek. The design required swales were to be lined with erosion control matting and hay bale barriers. A double barrier of hay bales was to be installed at the site perimeter. Stockpiled soil outside of the Long Shed was covered with liner material and tied down with nylon rope to prevent exposure of the stockpiled soils due to high winds. Sedimentation basins were sized and located on the Parker property north and south of the property. Drawings detailing the interim erosion control measures were reviewed with the Volpe Center's removal contractor, MARCOR. Drawings C-3, C-4, C-11, C-12, and C-13 describe these measures in greater detail and are included within this amendment.

5. Revised Excavation Procedures

Section 2.2.4 of the RAWP dated May 17, 2000 originally described the sequence of soil removal operations to be conducted at Operable Unit 02. Based on the results of surface soil sampling, the original RAWP described the excavation of a maximum of 18 inches of asbestos containing soils from Operable Unit 02. As on-site removal actions were undertaken, a series of test pits and test trenches were excavated partly in conjunction with an expanded archaeological investigation of the site. Based on the significant number of additional soil samples and expanded types of analytical methods used to test the soil samples for the presence of asbestos, EPA increased the depth of excavation at the portion of the Operable Unit 02 North of Rainy Creek to 4 feet in most locations. Additional soil excavation was also performed in one location north of the West Shed to a depth of 8 to 12 feet.

6. Site Survey Plans

Locations of test pits, test trenches, and soil sampling results were plotted on topographic survey drawings of Operable Unit 02. A 100-foot by 100-foot grid was overlaid over the topographic survey drawings and provided to the EPA OSC for use in planning soil excavation at Operable Unit 02. The sampling grid drawings are provided in Appendix A to this Amendment No. 1.

7. Restoration Activities at Vermiculite "Hot Spot"

On the Parkers' property south of Rainy Creek, an area of highly concentrated vermiculite was excavated from a location adjacent to Rainy Creek and the Kootenai River. In order to guard against erosion of the riverbank, a specification and sketch were developed for installing stone rip rap at this location. The Volpe Center's removal contractor installed the stone rip rap at the deep excavation area near Rainy Creek and the Kootenai River. This modification is indicated on Sheet C-12 of the Asbestos Removal Project Plans.

8. Extent of Investigation at Archaeological Site

Section 1.2.11 of the May 17, 2000 RAWP described the extent of soil removal to be coordinated with a professional archaeologist for excavations within an area of archaeological significance. The archaeological investigation was originally planned for the area of archaeological significance defined as 24LN1045 and eligible for listing as a historic place. Following preliminary site reconnaissance, discussions with the Montana Historical Preservation Office, and representatives of the Salish/Kootenai tribes, EPA directed that the scope of the archaeological investigation be expanded to include the area north of Rainy Creek on the Parker property and on Kootenai Development Corporation property south of Parkers' property. The Volpe Center's removal contractor worked with the archaeologist to excavate test pits and test trenches enabling the project archaeologist to investigate these additional areas prior to initiating soil removal operations.

9. Amended List of Drawings

Section 2.2.10 of the original RAWP anticipated preparation of four design drawings. Modifications to the on-site removal activities necessitated the preparation of eleven additional design drawings and additional technical specifications. The drawings prepared or modified as a result of the necessary revisions to the RAWP are listed below:

Cover Sheet

- C-1 Existing Conditions Plan – North
- C-2 Existing Conditions Plan – South
- C-3 Erosion Control Plan – North
- C-4 Erosion Control Plan – South
- C-5 Demolition Plan – North
- C-6 Demolition Plan – South
- C-7 Final Grading Plan – North
- C-7A Final Grading Plan – North
(structures and sprinkler system scheduled for demolition not shown)
- C-8 Final Grading Plan – South
- C-9 Test Pits and Air Monitoring Locations – North
- C-10 Test Pits and Air Monitoring Locations – South
- C-11 Interim Erosion Control Plan – North
- C-12 Interim Erosion Control Plan – South
- C-13 Interim Erosion Control Plan Details
- C-14 Site Restoration Plan – North
- C-15 Site Restoration Plan – South

The additional design drawings are provided in map pockets as Appendix B to this Amendment No. 1 to the RAWP.

10. Schedule Impacts

The original RAWP was based upon field staff working 10-hour days, six days per week. Due to schedule impacts, the workday was typically extended to 12 hours per day, in some cases, seven days per week.

11. Air Monitoring Requirements

Section 2.2.8 of the original RAWP described the preparation of general air monitoring standards and procedures to be conducted at the subject property before, during, and following removal operations. Now that a more complete understanding of the testing criteria and analytical laboratory standards has been determined, the following procedures should be implemented. During the summers of 2000 and 2001, air monitoring will be conducted to determine airborne asbestos fiber levels during the emergency removal actions. The air monitoring firm will perform all of the air monitoring including the personal air samples collected for the removal action contractor. Air monitoring will be performed prior to work being initiated at the removal action site to determine background levels of fibers in the air. These background air samples will be collected prior to initiation of work during both the 2000 and 2001 summer seasons. Air monitoring will be performed during removal actions, demolition activities, and transport activities to ensure that fibers are not being released from the work areas during removal actions, determine the appropriate level of respiratory protection for removal action workers, and to document fiber levels following the removal actions.

All of the air monitoring will be performed using low volume sampling pumps with a flow rate of 1-3 liters per minute (L/min) depending on the type of sample being collected. The air sampling cassettes will be three-piece, 25 millimeter diameter, with an open-faced 50 millimeter electrically conductive extension cowl. Each cassette will be loaded with either a capillary pore polycarbonate filter having a pore size less than or equal to 0.4 micrometers (μm) or mixed cellulose ester filter having a pore size less than or equal to 0.45 μm . Either type of filter will be backed by a 5 μm pore size mixed cellulose ester backup filter and supported by a cellulose support pad.

All of the air samples collected will be analyzed using either one, or a combination of, the following analytical methods:

NIOSH Method 7400, Phase Contrast Microscopy (PCM)
EPA AHERA Method, Transmission Electron Microscopy (TEM)
ISO Method 10312, TEM

The analytical method used will be determined by the EPA OSC depending on the type of sample being collected, urgency of the results, and type of result required. Analytical methods will be discussed further in the following paragraphs.

Two laboratories will be utilized for air sample analysis during the removal action. An on-site laboratory will be used to analyze air samples requiring immediate "turn around" times, such as personal air samples and worst-case perimeter air samples. The remainder of the samples will be shipped to an off-site laboratory. Both laboratories will be accredited under the Laboratory Accreditation Program as sponsored by the American Industrial Hygiene Association (AIHA). The laboratories will also actively participate in the NIOSH Proficiency Analytical Testing Program for Laboratory Quality Control for asbestos. Lastly, the laboratories will be fully accredited for TEM and PCM analysis under the National Voluntary Laboratory Accreditation Program (NVLAP) as sponsored by the National Institute of Standards and Technology (NIST).

The air monitoring firm will collect background air samples at the project site to determine background airborne asbestos fiber levels prior to the initiation of work at the removal action site during both the 2000 and 2001 summer seasons. The air monitoring firm will collect air samples at identical locations on the project site on three continuous days to determine background airborne asbestos fiber levels. The background air samples will later be compared to the final clearance air samples collected at the end of the 2000 and 2001 summer seasons. This comparison is performed to ensure that airborne asbestos fiber levels at the completion of the summer's removal action activities are equal to or lower than the asbestos fiber levels present prior to initiating activities.

The majority of the background air samples will be shipped off-site and analyzed using ISO Method 10312 (TEM). However, several "worst-case" samples will be analyzed each day on-site utilizing the NIOSH 7400 Method (PCM), followed by the EPA AHERA Method (TEM). Once analyzed on-site, ten percent of these samples will also be shipped off-site for analysis by ISO Method 10312 (TEM).

The air monitoring firm will conduct air monitoring during all activities including soil removal, demolition activities, and contaminated material transport, performed as part of the removal action during the 2000 and 2001 summer seasons. These samples will be collected each day that work is being performed on or adjacent to the removal action site.

Each day, the air monitoring firm will collect air samples at fixed locations along the perimeter of the removal action site, in the clean rooms, and at the exhaust of the negative air machines. At the request of the EPA, the air monitoring firm will also collect ambient air samples at additional locations depending upon the activities being performed on a particular workday. These locations may include the office trailers, along Rainy Creek Road, at particular locations along the perimeter of the site, or on properties that are adjacent to the site. The additional ambient air samples will only be collected at the request of the EPA, and will be discontinued when site activities change, or when the required data has been obtained.

The majority of the ambient daily air samples will be shipped off-site and analyzed using ISO Method 10312 (TEM). However, several "worst-case" samples will be analyzed each day on-site utilizing the NIOSH 7400 Method (PCM), followed by the EPA AHERA Method (TEM). Once analyzed on-site, ten percent of these samples will also be shipped off-site for analysis by ISO Method 10312 (TEM).

The results of the air sampling will be used to determine if the removal action contractor's work practices are acceptable. The removal action contractor's work practices will be modified when perimeter air sample results exceed 0.01 fibers per cubic centimeter (PCM), or 70 structures per square millimeter (TEM).

The air monitoring firm will collect daily personal air samples on the removal action contractor's workers to document compliance with OSHA's Asbestos Standard for the Construction Industry (29 CFR Part 1926.1101). These samples will be collected during all removal action related activities performed during the 2000 and 2001 summer seasons. The air monitoring firm will collect time-weighted average (TWA) and excursion samples from ten percent (or a minimum of two) of the workers each day removal action activities are performed. The TWA samples will be started at the beginning of each workday and will be turned off at the conclusion of each workday. TWAs will be adjusted using the Brief and Scala Method for workdays that last longer than eight hours. Thirty-minute excursion samples will be collected from workers during work activities that are expected to generate the highest fiber levels.

The results of the TWA and excursion samples will be compared to the OSHA Asbestos in Construction Standard to determine if the level of respiratory protection worn by removal action workers is adequate.

All of the personal air monitoring samples will be analyzed on-site utilizing the NIOSH 7400 Method (PCM), followed by the EPA AHERA Method (TEM). Once analyzed on-site, ten percent of these samples will also be shipped off-site for analysis by ISO Method 10312 (TEM).

At the conclusion of the removal action for the entire project site, or when removal action activities have been completed for the summer, the air monitoring firm will collect final clearance air samples at the project site. The air monitoring firm will collect air samples on three consecutive days at the same locations as the background samples collected prior to the initiation of that summer's activities. These samples will be compared to the background air samples to ensure that airborne asbestos fiber levels at the completion of the removal action are equal to or lower than the asbestos fiber levels present prior to initiating that summer's removal action activities.

At the request of the EPA, the air monitoring firm will also collect partial site clearance samples in order to clear portions of the site where removal actions have been completed. These ambient air samples will be collected along the perimeter of, and within, the portion of the site to be cleared for three consecutive days. If the air sampling results from the three days of sampling are below 0.01 fibers per cubic centimeter (PCM), or 70 structures per square millimeter (TEM), then the area will be cleared and the removal action site perimeter will be adjusted accordingly.

All of the ambient final clearance air samples will be analyzed on-site utilizing the NIOSH 7400 Method (PCM), followed by the EPA AHERA Method (TEM). Once analyzed on-site, ten percent of these samples will also be shipped off-site for analysis by ISO Method 10312 (TEM).

Initially, the EPA requested that the air monitoring consultant use MIE DataRAM™ Portable Real Time Aerosol Monitors along with the low volume air sampling pumps to conduct continuous air monitoring on the perimeter of the project site. However, the MIE DataRAM™ Portable Real Time Aerosol Monitors identify the total mass of airborne dust (expressed as micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) of air) within the air. These instruments are not specific for asbestos, and therefore, were determined to be not applicable for use on this site.

12. Inclusion of EPA Sampling and Analysis Plan

The sampling and analysis requirements are mentioned in a general way in Section 1.2.13 of the original RAWP. Site specific requirements and procedures are included within the EPA Sampling and Analysis Plan that was appended to the original RAWP dated May 17, 2000. As the project scope increased, CDM Federal prepared a draft sampling and analysis plan in July 2000 for the Operable Unit 02. By this reference, the "EPA Sampling and Analysis Plan" dated January 4, 2000 is hereby included within this report.

13. Quality of Imported Backfill Material

Sections 3.1.12 and 3.1.13 of the May 17, 2000 RAWP discussed the availability of local borrow material for backfill operations during restoration of the Operable Unit 02 property. The Volpe Center investigated several sources of locally available borrow material for use in backfilling areas of the Parker property north of Rainy Creek where asbestos containing soils had been excavated. Extensive laboratory testing of physical soil properties and environmental analysis for contaminants of concern were performed on soil samples obtained from each potential borrow source.

14. Land Surveyor Scope of Work

The original RAWP described the scope of survey plan requirements in Section 2.2.1. The scope of work for the surveyor was significantly expanded during the 2000 construction season. A local surveyor, under contract to CDM Federal, provided survey services in conjunction with aerial photography and digital topographic mapping of the abandoned vermiculite mine site, and other sites in Libby included in the planned removal action. Survey services were also provided at soil borrow sources and in the exclusion zone of Operable Unit 02 to establish the soil sampling grid, provide post excavation topography and related survey services requested by EPA's OSC.

15. Backfilling and Compaction

Related to the work described in item 13, above, compaction tests were performed in areas of the Parker property north of Rainy Creek where asbestos containing soils were excavated and backfilled with soils from off-site sources approved by EPA. The Volpe Center, through its subcontractor CDM Federal, arranged for Proctor Density Tests and in situ compaction tests in the backfilled areas. Periodic environmental analyses and physical soil tests were performed as the backfilling operations progressed.

Activities Planned for Winter 2000-2001 and the 2001 Construction Season

1. Anticipated Disposal of Asbestos Contaminated Soil and Debris

The original RAWP counted on the availability of the disposal site at Hole No. 23 in the abandoned vermiculite mine. Access to the disposal site has not yet been obtained, and the excavated materials remain temporarily stockpiled within the Long Shed on the Operable Unit 02 site.

It is anticipated that EPA will continue its efforts to obtain access to the abandoned vermiculite mine site over the winter. Assuming access is obtained, the asbestos containing soils and demolition debris temporarily stockpiled at Operable Unit 02 will be disposed of at the abandoned vermiculite mine. The Volpe Center and its engineering subcontractor, CDM Federal, removal contractor MARCOR and lower tier subcontractors will provide on-site support services at the Operable Unit 02 site during the 2001 construction season. Staffing levels are projected to be similar to those provided during the 2000 construction season.

2. Alternate Disposal Sites

Section 2.1.2 and 2.2.3 of the RAWP dated May 17, 2000, described the preferred method of disposal at Hole No. 23 of the abandoned vermiculite mine. At this writing, the owner has not granted access to this disposal site, so The Volpe Center needs to formulate alternative disposal options for the demolition debris and contaminated soil generated at Operable Unit 02.

In the event that EPA is unable to gain access to the abandoned vermiculite mine site, EPA has requested the Volpe Center and its subcontractor CDM Federal to evaluate the feasibility of designing and constructing a landfill cell at the existing Lincoln County Landfill in Libby, Montana. Upon authorization and funding, CDM Federal will review existing maps, surveys, soil borings, hydrogeological data, and other information provided by the County. CDM Federal will prepare a brief feasibility study, propose cell capacity, construction schedule, and conceptual cost estimate for this landfill cell. Permitting issues will also be discussed with the County and State of Montana DEQ.

3. Future Use of the Operable Unit 02 Property

To facilitate the future use of the property, the Volpe Center planned to restore the finish grades to be similar to elevations that existed prior to remedial action per Section 3.1.14 of the RAWP. This amendment slightly modifies the intended course of action. The Volpe Center understands that EPA intends to complete the removal action at Operable Unit 02 to enable the property owners, Mel and Lerah Parker, to rebuild a residential dwelling on their property. In this regard, EPA has requested the Volpe Center and its subcontractor CDM Federal to conduct percolation and other

required soil tests to enable design and construction of one or more residential dwellings on the Parker property. Once the Parkers have determined the location(s) for the residential buildings, and the ground has thawed, the percolation tests will be performed. A redelineation of the 100-year floodplain contour will also be requested from the Lincoln County Health Department over the winter. The site final grading plan will be revised accordingly.

4. Final Disposal Site Determination and Testing of Imported Backfill Material

Portions of Sections 2.1.2, 2.2.3, 2.2.4, and 3.1.13 of the original RAWP discuss the removal, disposal, and restoration procedures intended for the remediation work at Operable Unit 02 site. Once the disposal location for stockpiled soil and demolition debris has been determined, the stockpiled soil will be removed from the Long Shed and the structure demolished. Asbestos containing soils will be excavated to a depth of 4 feet from the remainder of the Parker property north of Rainy Creek, approved backfill placed and compacted, the site final graded and approved topsoil placed. Environmental analysis and physical soil testing will be performed on backfill materials and topsoil prior to delivery to Operable Unit 02.

5. Restoration of Operable Unit 02 Property

Section 3.1.15 of the RAWP describes the procedure for restoration of the Operable Unit 02 property. Due to the revisions to the erosion control methods and contaminated soil removal operations, restoration procedures also require modification. Upon completion of final grading, interim erosion control measures will be removed, sedimentation basins backfilled, and the Parker property north and south of Rainy Creek will be regraded to accommodate the placement of topsoil. Approved backfill will be placed on the Parker property south of Rainy Creek prior to placement of topsoil. All areas receiving topsoil will be hydroseeded with a seed mixture approved by the Volpe Center and EPA.

6. Future Demolition Work at Adjacent Properties

The scope of work on the KDC property south of the Parker property and at the location of the former Loading Facility on the west side of the Kootenai River opposite Operable Unit 02 will need to be determined, planned, and scheduled during the winter. It is anticipated that additional soil sampling, excavation of asbestos containing soils, backfilling with approved borrow material, topsoiling, and hydroseeding will be performed at these two locations. Draft Removal Action Work Plans for these properties have been prepared and are currently going through internal review.